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SUMMARY OF FIELD EXPERIMENTS AND TECHNICAL REPORTS(U)

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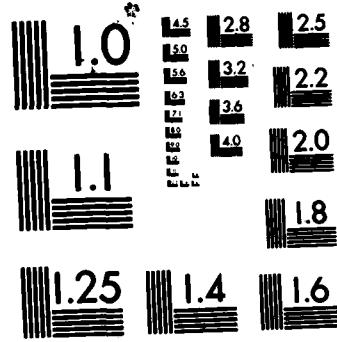
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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Report contains summary of a series of 18 job redesign field experiments conducted during project. Explores impact of changes in job attitudes and behaviors. Also summarizes 11 other projects in the areas of Job Context, environmental structuring, cognitive evaluation theory, decision analysis, productivity enhancement, organizational processes, personal control at work and work unit structure. |                                     |  |

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Final Report

Contract No. N00014-79-C-0750 NR 170-892

**Co-Principal Investigators:**

L.L. Cummings, Northwestern University  
Randall Dunham, University of Wisconsin-Madison

This report is divided into two parts:

- I. A description of the 18 field experiments conducted with the support of ONR funding.
- II. A listing and abstraction of the Technical Reports produced during the period of the ONR funding.



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## SUMMARY OF FIELD EXPERIMENTS CONDUCTED UNDER ONR FUNDING

A series of field experiments was conducted using a 2X3X3 design involving over 600 subjects. The first factor defines participation in an experimental or control group. The second factor designates at which of three semi-autonomous regions of the same organization subjects were stationed. The third factor indicates the time period at which assessment was made. Assessments were made prior to job redesign interventions, several weeks after intervention, and three months after interventions.

Within each of the three regions, a series of six independent experimental and control groups was identified. For each experimental group, a job design intervention was planned, implemented, and evaluated. Thus these studies actually involved a total of 18 independent field experiments.

Each of the 18 field experiments was planned using the following procedure: 1) A survey was conducted to obtain measures of each of the independent and dependent variables described later in this report; 2) Analyses were conducted to determine descriptive statistical summaries for each measure and the relationships between variables; 3) "Job improvement teams" (consisting of six or seven employees from the area) were formed for each of the 18 targeted areas; 4) the statistical summaries were presented to the job improvement teams; 5) a series of meetings was held with the job improvement teams and the researchers to help understand the information, identify reasons for the existing situation, and plan changes which were expected to lead to attitudinal and behavioral improvements.

After specific changes were developed, refined, and approved by management, statistical analyses were conducted to predict the probable effects of the changes. The changes were then implemented and studied. Predicted effects were compared to actual effects.

Constructs measured included each of the following:

1. Required worker behaviors
2. Perceived job characteristics
3. Organizational structure characteristics
4. Individual characteristics (values, abilities, etc.)
5. Performance (using evaluations and counts of activities)
6. Participation (tardiness, attendance, turnover)
7. Satisfaction
8. Motivation

The nature of the job changes ranged from relatively minor changes in the variety of tasks engaged in by job incumbents through major reorganizations of tasks, inter-worker relationships, and organizational sequencing.

Preliminary analyses have been conducted. The findings tentatively indicate that major aspects of the job design model used in this research are supported on a longitudinal basis and are capable of predicting the impact of specific job changes on worker attitudes and behaviors. A primary focus of the book manuscript currently being prepared is documentation of the procedures used in this research to facilitate replication by other researchers and use by practitioners. In addition, detailed results of the interventions will be presented.

II.

**AN ITEMIZATION OF THE TECHNICAL REPORTS PRODUCED**

**DURING THE PERIOD OF ONR FUNDING**

**INCLUDING AN ABSTRACT OF EACH**

TITLE: JOB CONTEXT SATISFACTION AND JOB DESIGN: A CONCEPTUAL PERSPECTIVE

GRANT NUMBER: N00014-79-C-0750

AUTHORS: Randall B. Dunham, Jon L. Pierce, and John W. Newstrom

STATUS: Working Paper, Graduate School of Business, University of Wisconsin-Madison

ABSTRACT: Recent empirical inquiry focusing on the moderating effect of job context satisfaction on the job content - worker response relationship has produced seemingly contradictory findings. Three types of explanations are explored: chance occurrence, sample distribution artifacts, and a series of alternative conceptual explanations. The first reconceptualization suggests that context satisfaction level influences high level needs. A second reconceptualization involved absorption/distraction as the process which explains the role of context satisfaction. Six possible determinants of absorption/distraction levels are discussed. Testable hypotheses for each idea developed are presented.

TITLE: CONSTRUCT DEFINITION OF TASK DESIGN AND RELATED CONCEPTS

CONTRACT OR GRANT NUMBER: N00014-79-C-0750

AUTHORS: Randall B. Dunham and Larry L. Cummings

STATUS: Working Paper, Kellogg Graduate School of Management, Northwestern University

ABSTRACT: A procedure is developed and illustrated with job scope perceptions for determining the stability of the factor structure within a data matrix. Emphasis is given to the importance of determining such stability prior to fixing the number of factors desired, rotated and interpreted. The procedure is applied to the four constructs fundamental to this research program. The procedure is suggested as substantially contributing to the validity of the constructs used in organizational behavior and organizational psychology.

TITLE: SOURCES OF ENVIRONMENTAL STRUCTURING AND PARTICIPANT RESPONSES

GRANT NUMBER: N00014-79-C-0750

AUTHORS: Jon L. Pierce, Randall B. Dunham, Larry L. Cummings

STATUS: Under Editorial Review, Organizational Behavior and Human Performance

ABSTRACT: This study investigated the effects of four sources of environmental structuring on employee responses. These sources are: job, technology, work unit, and leader behavior. Main, joint, and interactive effects were examined. Job structure had the strongest effect. It was demonstrated that technology, job, and work unit structure were found to be substitutes for leader structure. Leader structure had little unique impact on employee reactions except when the other sources of environmental structure were weak. Two alternative theoretical interpretations of the findings are offered: reactivity and "closeness."

TITLE: COGNITIVE EVALUATION THEORY: AN EXPERIMENTAL TEST OF PROCESSES AND OUTCOMES

CONTRACT OR GRANT NUMBER: N00014-79-C-0750

AUTHORS: Kimberly B. Boal and L. L. Cummings

STATUS: Published in Organizational Behavior and Human Performance, 1981, 28, pp. 289-310

ABSTRACT: Cognitive Evaluation Theory has been proposed as a viable theoretical framework for explaining the detrimental effects of performance contingent rewards on intrinsically motivated behaviors. A review of the literature suggested that this theory had not been adequately tested. A field experiment was undertaken to do this. The results did not support the theory.

TITLE: A FRAMEWORK FOR DECISION ANALYSIS AND CRITIQUE

CONTRACT OR GRANT NUMBER: N00014-79-C-0750

AUTHOR: L. L. Cummings

STATUS: Published in G. R. Ungson and D. N. Braunstein (Eds.), New Directions in Decision Making: An Interdisciplinary Approach to the Study of Organizations, pp. 298-308, Kent Publishing, 1982

ABSTRACT: A framework is established as a basis for analyzing and evaluating models of decision making that encompasses four levels of analysis (individual, group, organization, environmental) and three decision stages (determinants, processes, and effects). This framework is then used to evaluate and compare three papers on decision modeling and assess the contribution of each. In this process, several research issues are identified which would clarify and possibly improve the study of decision making.

TITLE BEHAVIORAL STRATEGIES FOR ENHANCING PRODUCTIVITY

CONTRACT OR GRANT NUMBERS: N00014-79-C-0680 N00014-79-C-0750

AUTHORS: Gary, Latham, L. L. Cummings, & Terence R. Mitchell

STATUS: Published in Organization Dynamics, 1981, Winter, pp. 4-23. To be reprinted in R. Steers and L. Porter (Eds.), Motivation and Work Behavior, McGraw-Hill, 1983.

ABSTRACT: A three stage process is proposed for enhancing productivity through the utilization of human resources. The stages comprising the process are: (1) identifying poor performance; (2) deciding what causes poor performance; and (3) coping with poor performance. Together these strategies form a performance enhancement system.

Strategies for identifying a poor performance include examining discrepancies between goals and measured achievement, making comparisons across people, units or organizations, and making comparisons across time.

A model for diagnosing and responding to poor performance is presented based on attribution theory. Empirical results in support of the model are discussed.

Steps for coping with poor performance include (1) defining performance behaviorally, (2) training managers to minimize rating errors, (3) setting specific hard goals, and (4) ensuring that the consequences of working toward and attaining the goals are positive for the employee.

TITLE: THE IMPORTANCE OF PROCESSES AND CONTEXTS IN ORGANIZATIONAL  
PSYCHOLOGY

CONTRACT OR GRANT NUMBER: N00014-79-C-0750

AUTHOR: L. L. Cummings

STATUS: Presented at Symposium on Industrial/Organizational Psychology  
Research Questions for the 1980's American Psychological Associa-  
tion, Montreal, Canada, September 3, 1980.

ABSTRACT: This is a conceptual, prescriptive article analyzing current trends and suggesting a redirection necessary for the advancement of organizational psychology. Two divergent but possibly complementary approaches--the conservative and the radical--are outlined as accomplishing such a redirection in the field. The conservative approach emphasizes four needs requiring attention: 1) improved construct validity, 2) more careful selection and measurement of dependent variables, including a change in those deemed important, 3) new applications of longitudinal and experimental research designs, and 4) an increased and more appropriate use of multivariate statistical analyses. The radical approach encompasses conceptualizing organizations as social structures, the symbolic nature of management as a process, and a focus on processes across levels of analysis. It is predicted that, regardless of whether one views the future in the field as being indicative of the conservative or a more radical approach, we will see the roles of contexts and processes in research and application as being influential.

TITLE: PERSONAL CONTROL AT WORK: ITS CONCEPTUALIZATION AND MEASUREMENT

CONTRACT OR GRANT NUMBER: N00014-79-C-0750

AUTHOR: David B. Greenberger

STATUS: Working Paper, Graduate School of Business, University of Wisconsin-Madison

ABSTRACT: Numerous psychological researchers have proposed control over a variety of factors as an important variable in understanding human behavior, but the construct has been largely neglected by organizational psychologists. This paper discusses the construct personal control over work-related factors and the development of a means for measuring control over work-related factors. Two dimensions of control were found, one measuring the degree of control desired at work and the other measuring the degree of control possessed at work. These dimensions were observed to be very different from the locus of control construct. Analysis of the data indicate that the difference between control desired and control possessed may be an important mediating factor in job satisfaction. The use of control in redesigning jobs was discussed.

TITLE: ORGANIZATIONAL EFFECTIVENESS AND ORGANIZATIONAL BEHAVIOR: A  
CRITICAL PERSPECTIVE

GRANT NUMBER: N00014-79-C-0750

AUTHOR: L. L. Cummings

STATUS: Published in K. S. Cameron and D. Whetten (Eds.), Organizational Effectiveness: A Comparison of Multiple Models, Academic Press, 1983

ABSTRACT: After comparing and critiquing the contributions of six papers on organizational effectiveness within a perspective framework, this paper suggests what organizational behavior can offer in the way of theory and application to the study of organizational effectiveness. Strategies/ideas for the improvement of effectiveness are outlined that can be applied to the individual or generalized to larger units/groups.

TITLE: ORGANIZATION BEHAVIOR

GRANT NUMBER: N00014-79-C-0750

AUTHOR: L. L. Cummings

STATUS: Published in Annual Review of Psychology, 1982, Vol. 33

ABSTRACT: This paper reviews the literature on organizational behavior from 1977 through the first quarter of 1981 and attempts to be projective and prescriptive as well as descriptive of the work covered. Selected topics reviewed include new overviews and integrations of the field, task design, feedback, organizational structure, technology, and control, new conceptualizations and emerging topical trends. These topics were chosen to reflect both current and controversial issues of recent research. Additionally, this review attempts to bring the macro or organizational side of organizational behavior into focus and analysis and conclusions are drawn concerning theoretical and research needs. Finally, it projects the likely developments within organizational behavior.

TITLE: COGNITIONS OF WORK UNIT STRUCTURE

GRANT NUMBER: M00014-79-C-0750

AUTHORS: Richard Blackburn and Larry L. Cummings

STATUS: To appear in the Academy of Management Journal, 1982

ABSTRACT: An improved conceptual and empirical approach to identifying dimensions of work unit structure is proposed and tested. Multi-dimensional scaling procedures utilizing input data from 180 unit respondents recover a perceptual map of work unit structure. Interpretive analyses suggest that participants differentiate work unit structure along five dimensions: bureaucratic, affective, interaction, function and size. Both substantive and methodological advances are claimed.

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